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Public Perception of Digital Financial Service: The Preliminary Evidence from Indonesia

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Abstract:

The low level of community access to formal financial institutions needs a policy breakthrough to create a more inclusive financial system. In order to meet the needs of inclusive finance, Bank Indonesia launched a Digital Financial Services (DFS) which in its development, is also synergized for the benefit of Direct Cash Assistance distribution program by the government. This study aims to determine the perceived usefulness, perceived ease of use and perceived risk of the unbanked community towards the presence of DFS and to analyze the difference of perception based on demographic factors. This study involves respondents that are included in unbanked category and received Unconditional Cash Transfer (UCT) who live in three areas of the Central Java. The study results showed that the majority of unbanked community had positive perceptions on DFS. In addition, there were no differences in those perceptions based on demographic factors. The finding of a positive perception is expected to facilitate the acceleration program of DFS means implementation for non-cash transactions, particularly among the unbanked community.

Keywords: Digital Financial Services, perceived usefulness, perceived ease of use, perceived risk, demographic factor

1. Introduction

The Bank Indonesia household balance sheets survey in 2012 showed that only 48% of the total households in Indonesia had savings in banks and non-bank financial institutions. The results are not much different from the World Bank survey in 2010 which stated that only 49 percent of Indonesian households had access to formal financial institutions. This gives a clear indication of the low level of public accessibility to financial institutions. Therefore a policy development breakthrough is needed to create a more inclusive financial system. To answer the needs of inclusive finance or the ease of getting financial services throughout Indonesia, Bank Indonesia launched the Financial Services Digital (DFS) in 2013 in the form of non-cash service as the development of branchless banking. DFS is the activity of limited payment system services and/or finances that are not performed through a physical office, but by using technological means, among others, mobile based or web-based means and third-party services (agents), with the service targets of unbanked and underbanked community. Thus people who have not been involved in banking services can access financial services. In 2014, Indonesia was still lagged behind other ASEAN countries for non-cash transactions, which amounted to only 0.6 per cent, while other countries like Singapore performed non-cash transactions amounting to 44.5 per cent of all retail transactions. At the end of 2015 period, the inclusiveness index in Indonesia reached the middle level of 35.8 per cent with an increasing trend and also the organizer banks and DFS agents continued to rise (www.bi.go.id). Especially for DFS in the form of electronic money, there was an increase from 2.560.591 transactions worth 76.675 million rupiah to Rp 63.883.592 transactions worth 587.052 million in May 2016. In its development, in addition to increase inclusive finance in Indonesia, DFS was synergized by Unconditional Cash Transfer distribution program. It was expected that Unconditional Cash Transfer distribution such as direct cash assistance (UCT) will be more efficient and effective through DFS. During this time UCT distribution is done through the competent government agency or non-profit organization appointed by the government. The post office is one of the UCT payments outlets to the public. However UCT distribution raised many technical problems which caused the allowance was not distributed smoothly and there were long queues. The acceleration of DFS implementation cannot be separated from the public acceptance level to adopt the type of financial service. One very influential theory to explain the acceptance level of new technology adoption is the Technology Acceptance Model (TAM) introduced by Davis (1989). TAM considers that perceived usefulness and perceived ease of use is a decisive factor in the acceptance of a technology adoption. Perceived usefulness is the level of user belief that the use of technology or system will improve performance. The results of previous studies such as Shanmugam et al. (2014) and Mangin et al. (2012) found that a person who had a positive perception on online banking benefits (perceived usefulness), would have greater desire to use mobile banking. While,

perceived ease of use is the level of user belief that new technology or systems can be used easily and free of problems. Technology which is perceived as easier to use will be more accepted by the users (Venkatesh and Morris, 2000). In the case of mobile banking, Wang et.al (2003) explains that perceived ease of use help customer belief towards the banks for sending a signal that the bank really cares about the interests of its customers. Several previous studies such as conducted by Shanmugam et al. (2014), Chitungo and Munongo (2013) and Jeong and Yoon (2013) provided empirical evidence that perceived ease of use had a significant impact on interest in using mobile banking.

In the context of DFS with reference to TAM framework, public acceptance of DFS that aims for the development of financial inclusion and supporting the distribution of government grants in order to be effective will depend on the extent to which the public has the perception that DFS is helpful and easy to use. However, it is possible that these two factors are not quite able to explain the reason for DFS acceptance. Riquelme and Rios (2010), Luo et al (2010) and Chung and Kwon (2009) suggested the need to examine the perceptions of risk factor. There are two aspects of risk technology adoption, namely: human error and technical error (Littler & Melanthiou 2006). The higher the perception of risks to face, the more reluctant to adopt technology.

There is a different perception of the presence of banking service technological innovations such as DFS. This is due to how someone interprets the stimuli he or she receives which is influenced by the unique needs, expectations and values of each individual (Schiffman, Kanuk, Hansen, 2012). Perception is a process where a person organizes and interprets stimuli from the environment (Marshall 2001). While, Robbins and Judge (2016) mention that individual characteristic affects the formation of a person's perception. When an individual try to interpret what he sees, it very depends on individual characteristics of the people concerned or demographics such as age, gender, experience and education level. For example, a relatively highly educated people may perceive that DFS use is easier compared to people with lower education. Even so Tarhini, Hone and Liu, (2014) stated that there were still relatively few studies examining the correlation between demographic factors and the acceptance behavior of technological innovation. Previous study conducted by Linden (2008) found the influence of demographic factors, particularly the experience on the perceived risk related to climate change. Other studies placed the demographic factors as moderating variables. For example, Chung et al. (2010) who conducted a study on the role of age factor in moderating the effect of perceived ease of use on the interest in using an online community engagement.

Based on the description above it is necessary to study the perception of the society on the presence of DFS, not only the perceived usefulness and ease, as argued by TAM but also the perceived risk. In addition, this paper also analyzes their correlation with demographic factors so that there are two study problems: (A) what are the unbanked public perceptions of the DFS usefulness, ease and risk? and (b) Are there any differences of perception based on demographic factors? The description of the unbanked public perception towards DFS is expected to be used to develop policies and models of DFS accessibility acceleration.

2. Research Methods

This study was a descriptive research because it was designed to illustrate the public perception of the benefits, ease and risks in using DFS as a mean for financial services and the distribution of UCT. Society concerned was a society which was included in the category of unbanked group and received Unconditional Cash Transfer (UCT).

The population in this study was the society included in the category of unbanked people and received Unconditional Cash Transfer (UCT) and DFS authorized agents. Samples to be used were as many as 160 people who were included in unbanked category and received Unconditional Cash Transfer (UCT). This study took three research sites located in the Central Java Province that were Salatiga, Boyolali, and Semarang District. The selection of study locations was with the consideration of the representation of urban areas (Salatiga Municipality) and non-urban areas (Semarang and Boyolali District). The samples of 160 respondents were in three areas for 40 respondents from the Salatiga Municipality, 60 respondents from Semarang District, and 60 respondents from Boyolali District. The sampling method used snowball sampling. This method was chosen to find respondents who received UCT where enumerators sought information based on the information from the respondents who had been interviewed previously.

The data collected in the study were grouped into three sections: (a) the respondents' profile (b) the respondent's perception on the presence of DFS and (c) the correlation between perception and demographic factors. The respondents' profile was more focused in exploring demographic factors and knowledge on DFS. The perception was analyzed in terms of respondents' perception of the usefulness, ease and the risks of DFS adoption. To measure the level of perception about the DFS usefulness, the researcher proposed eight question items, while the perceived ease and risks had three question items, respectively. Data collection method used structured interviews. Enumerators approached respondents one by one then explained the purpose and objective of the study activity and then asked the questions that had been prepared in the form of a questionnaire. In addition, to explore the DFS Focus Group Discussion (FGD) was conducted by involving the banking parties.

3. Result and Discussions

3.1. Description of the Respondents

The total number of the respondents in this study was as many as 160 people who received UCT scattered in the neighborhood District/City, including Salatiga, Boyolali District and Semarang District. Table 1 shows that in terms of gender, male respondents were more than female respondents (56.52 per cent). In terms of age, majority of the respondents aged more than 50 years with education level of primary and no school of 78.13 per cent. In addition, the respondents' employment was dominated by labors (peasant, factory, building, washing, etc.) of 35 per cent and farmers (18.75 per cent). The demographic characteristics showed that the respondents were the people in middle-low economy.

Characteristic	Category	Number of respondents	(per cent)
Gender	Male	90	56.25
	Female	70	43.75
Age	20-30	10	6.25
	31-40	22	13.75
	41-50	42	26.25
	51-60	45	28.16
	>60	41	25.64
	Education level	No school	45
Primary		80	50.00
JHS		26	16.25
SHS		9	5.63
Employment status	Labor	56	35.00
	Farmer	30	18.75
	Trader	16	10.00
	Self Employed	18	11.25
	Unemployed	21	13.13
	Others	19	11.88

Table 1: Gender, Age, Education level and Employment Status of the Respondents

Of the 160 respondents only 14 people or 8.75 per cent who had been aware of digital financial services (DFS) initiated by Bank Indonesia to support government programs so that all levels of society including low economy group obtain financial services or known as inclusive financial program. This shows that DFS program has not been widely recognized by the society. Many parties introduced DFS not only from socialization of the banking parties but also by the Post Office when people took UCT, relatives and the Department or Local Government Officer. Table 2 also showed that not all respondents used DFS (11 people). There were a variety of interests in using DFS, but the most reason was to take UCT (5 people) and the remaining reason was to take salary, pay installments and receive the money transfer

m	Number	(%)
Know DFS		
Yes	14	8.75
No	146	91.25
Since		
1998	1	7.14
2011	7	50.00
2013	1	7.14
Didn't remember	5	35.71
The party introduced		
Sosialisasi dari Bank	4	28.57
Post officer	2	14.29
Family	6	42.86
Agency	2	14.29
Ever Use DFS		
Yes	11	6.88
No	149	93.13
In such transaction		
Take UCT	5	45.45
Take salary	1	9.09
Pay installment	1	9.09
Receive money transfer	1	9.09
No reason	3	27.27

Table 2: Number of Respondents Who Know DFS and the Information Source

3.2. Public Perception on DFS

DFS program acceleration to overcome the barriers for the community to access financial institutions services depends on how the public has the perception on DFS which in turn will affect the community interest in using DFS. Given many people were not familiar with DFS, then to determine the level of DFS acceptance in the field study, respondents were briefed in advance by the surveyor in the form of a general knowledge of what DFS is, how to use it and its benefits.

Panel A of Table 3 showed that the overall respondents' perceptions of DFS benefits was high, the mean score was 3.65 with a standard deviation of 0.94. Respondents agreed that if they would be able to use DFS it would save time because they did not need to visit the bank and were able to access banking services anywhere within 24 hours. Moreover, in terms of cost, the community gave the assessment that the cost incurred in the form of phone charge would not be burdensome when it was compared to the benefits from it. Perceptions of the respondents about the ease when using DFS was shown in Panel B Table 3 which indicated that overall respondents' perception about the ease when using DFS was in quite high category with an average score of 3.26 with a standard deviation of 0.85. Respondents felt no difficulty when they had to learn to use DFS since it did not require time consuming effort. DFS acceptance level to accelerate the society in order to access financial institutions cannot be separated from the perceived risk or perceived sense of comfort felt by the public. Panel C of Table 3 showed the mean score of perceived risk of using DFS was 2.77 with a standard deviation of 0.88. This means that respondents tend to disagree if DFS with mobile phones means was risky because it would be accessible to others who do not have rights. Besides, they were not worried that DFS as banking services through mobile phones would be exposed to the virus and might eliminate the transaction information and caused miscalculation when compared directly with teller transactions. This perception indicated the facilitating condition of DFS in the form of mobile phones was socially acceptable for the society to perform financial transactions with the banks.

No	Item (using point scale from 1 to 5)	Mean	Std. Dev	Kustosis
Panel A. Perceived Benefits of DFS				
1	DFS help me to save time, because I do not need to visit the bank to conduct transactions	4.04	0.57	2.50
2	I can access banking services anywhere by using a mobile phone	4.06	0.57	2.46
3	DFS allow me to access banking services more quickly than other services	3.85	0.74	4.72
4	DFS can fulfill my needs to manage personal finances directly without visiting a bank	3.88	0.69	2.01
5	DFS help me to get banking services 24 hours a day without having to wait for bank service schedules	3.78	2.52	.62
6	I feel that the pulse charge to be incurred for the transaction do not prevents me from using the DFS services	3.98	0.59	4.77
7	I feel that the benefits of using DFS is greater than the cost of SMS/other kinds that should be payed to use DFS	2.69	1.05	-1.16
8	DFS help me to save time, because I do not need to visit the bank to conduct transactions	2.89	0.82	-.79
		3,65	0,94	
Panel B. Perceived Ease of Use				
1	I had no difficulties in learning how to use DFS	3.01	0.87	-1.15
2	I find no difficulties if I have to use the same phone number constantly	3.51	0.81	-.052
3	I feel no need to endeavor to try using DFS	3.25	0.86	-.68
		3,26	0,85	
Panel C. Perceived Risk of Using DFS				
1	I do not feel comfortable to deal with banks by using mobile phone since the information and accounts can be accessed by a hacker or people who do not have the authority	2.77	0.88	-.17
2	I am worried about using banking services through mobile phone because it can be exposed to viruses that can damage the phone and the information in it	2.63	0.87	-.63
3	Perform banking transactions through DFS has the risk of error greater than deal with the bank teller directly	2.91	0.90	-.61
		2,77	0,88	

Table 3: Perception on DFS

Perceptions of the respondents in terms of benefits, ease of use, risk, response to quickly decide to adopt new technologies such as DFS (early adopter) or only wait later (laggard) were also the study variables. The results of field study as presented in Table 4 showed that the overall mean score was just 3.44 with a standard deviation of 0.98. This might imply that the respondents had a positive perception of the presence of DFS and also wanted to take advantage of the services facility quickly. It was also supported by the respondents' answer that adopting technologies relied more on their own decisions, respondents were interested in the development of technology and perceived that technology provided many benefits.

No	Item	Mean	Std. Dev	Kurtosis
1	I am pleased to be the first person to make use of the new services related to technology	3.44	0.98	-.935
2	When making the decision to use the new technology, I will rely on my own personal standards despite the others'	3.38	0.94	-.982
3	I am interested in hearing about the development of new technology	3.86	0.60	2.646
4	Technological developments bring benefits in my life	3.26	0.84	-.548

Table 4: The Speed Level of Adopting Technology

By considering the data distribution, demographic factors used were gender, age and education level. Panel A in Table 5 showed that there was sig.t-test no Asymp.Sig value smaller than 0.05 so that the public perception of the DFS benefits had no difference or a significant association with gender, age and education level of the respondents. In the previous analysis it was discovered that the mean score of the DFS benefit expectations was 3.65 so that it can be understood that any type of demographic factors of the respondents, they agreed that if later they would have the opportunity to use DFS, DFS presence would be beneficial because it saves time. There is no need to visit the bank and it may speed up access to banking services without being fixed by the time the place.

Likewise, panel B in Table 5 showed that there were no sig. t-test and Asymp.Sig value smaller than 0.05 so that public perception about the level of ease of DFS use was not significantly different from the gender, age and education level of the respondents. If the previous analysis discovered that the mean score of the level of ease of DFS use was 3.26 then the perception of respondents that DFS use was fairly easy was not dominated by respondents with certain demographic factors. Furthermore, Panel C in Table 5 showed also that there were no sig. t-test and Asymp.Sig smaller than 0.05, so that the perception of risk faced by the respondents if they used DFS did not differ significantly with demographic factors. The previous analysis discovered that the mean score of the perception of risk was 2.77. This means that respondents with a demographic background tend to disagree if using DFS would pose a risk.

	Value	Asymp. Sig. (2-sided)
Panel A. Perceived Usefulness of DFS		
Gender		
Independent sample t-test (sig.)		.465
Pearson Chi-Square	3.721 ^a	.714
Likelihood Ratio	4.848	.563
Age		
Independent sample t-test (sig.)		.312
Pearson Chi-Square	5.498 ^a	.482
Likelihood Ratio	6.783	.341
Education Level		
Independent sample t-test (sig.)		.263
Pearson Chi-Square	3.872 ^a	.694
Likelihood Ratio	4.6964	.584
Panel B. Perceived Ease of DFS		
Gender		
Independent samle t-test (sig.)		.058
Pearson Chi-Square	5.475 ^a	.140
Likelihood Ratio	5.684	.128
Age		
Independent sample t-test (sig.)		.602
Pearson Chi-Square	4.651 ^a	.199
Likelihood Ratio	4.497	.213
Education Level		
Independent sample t-test (sig.)		.108
Pearson Chi-Square	1.070a	.784
Likelihood Ratio	1.061	.786
Panel C. Perceived Risk of DFS		
Gender		
Independent sample t-test (sig.)		.222
Pearson Chi-Square	5.302 ^a	.151
Likelihood Ratio	5.492	.139
Age		
Independent sample t-test (sig.)		.708
Pearson Chi-Square	3.950 ^a	.267
Likelihood Ratio	4.723	.193
Education Level		
Independent sample t-test (sig.)		.296
Pearson Chi-Square	.419 ^a	.936
Likelihood Ratio	.407	.939

Table 5: Perception of DFS and Demographic factors

3.3. Discussion

DFS launching by BI in 2013 represented a support for financial inclusion program and the fact that Indonesian people who had access to the banking sector was still low compared to neighboring countries such as Thailand, Malaysia, China, India and the Philippines. However, from the study results involving 160 respondents among the underprivileged group and living in three cities, Semarang District, Boyolali district and Salatiga we found that DFS had not been widely known with just only 14 people or 8.75 per cent who had already known DFS.

Although it has been about three years since DFS program was launched, but only few people who knew about the existence of DFS. This raises questions about the effectiveness of socialization conducted by BI. BI stated that they had socialized DFS to agents in several districts/cities. Currently, there were 84,000 DFS agents, and in the average bank has about 30,000 agents, including legal entities and individual agents.

With good socialization it is expected that society will have positive perceptions about DFS which in turn will accept the presence of DFS. The study results on perceived usefulness showed that some people expressed that DFS had great benefits. This result implies that the potential for accelerating the implementation of DFS is great considering the public has a positive perception of the DFS benefits. The results of a study by Shanmugam et al. (2014) and Mangin et al. (2012) provided empirical evidence that there was a positive correlation between perceived usefulness and intention to use mobile banking. DFS existence is not only for the financial inclusion benefit but also as a media for distribution of Unconditional Cash Transfer programs. If DFS can be applied well, the public will get a benefit because they do not need to face a long queue even jostling at the Post Office. People can simply come to the nearest agent to withdraw money and not all money should be withdrawn.

If the unbanked community feels confident that DFS is easy to use then they will use it immediately. The study results indicated that the public had perception that DFS was easy to use and did not require much effort to learn its use. Research in several other countries as was conducted by Chau and Lai (2003), Chitungo and Munongo (2013) and Jeong and Yoon (2013) found that perceived ease of use had significant positive effect on the use of mobile banking. DFS ease of use aspect is essential since non-cash transactions are not only directed to the urban community with high level of knowledge and high access to finance but they are also directed for people who live in rural areas with relatively low level of education. Through handphone media, the community can easily save money, withdraw money, or transfer without the need to go to the bank directly, they can only come to the closest individual DFS agents. Acceleration of the DFS use has a big opportunity given the mobile device penetration in various segments of society. Based on e-marketer survey results released by *Tempo Newspaper*, January 24, 2015, Indonesia was predicted in the top four mobile phone user population, after China, US, and India, with 69.4 million users, up from seventh grade in 2014 and in 2018 it was expected to surpass 100 million.

DFS use acceleration is like two sides of a coin. On the one hand public need digital services which are easy to operate, practical and fast are required to adopt DFS quickly, but on the other hand with the ease it will often pose a greater risk of data safety. Eriksson, et al (2008) asserts that any e-banking applications must incorporate a number of important elements that come from security. DFS perceived risk is important to note given the research conducted Abadi et al (2012) showed that perceived risk had a negative effect on the interest in using mobile banking and the main factors that hinder the adoption of such services. The similar results were also found by Polatoglu and Ekin (2001); Howcroft et al. (2002); Pikkarainen et.al (2004), Jahangir and Noorjahan (2008), Nasri (2011). The study results provided empirical evidence that the community did not have any negative risk perceptions towards DFS. Society was not worried that DFS would be accessible to others, exposed to the virus and would cause an error in the calculation of the transaction. Thus an effort to socialize DFS as convenient and secure banking services would be easier.

Some of the above findings led to the perception that DFS was useful, easy to use and did not have a high risk. It is possible that the perceptions of DFS adoption in each individual is different, but based on demographic factors including gender, age and education level, there was no significant difference. A previous study conducted by Chung et al. (2010) proved that age factor failed in moderating the effect of perceived ease of use on the interest in using online community engagement. Likewise, the study conducted by Tarhini, Hone and Liu (2014) proved that the gender and age factors failed in moderating the effect of perceived usefulness and perceived ease of use on the interest in using e-learning. Thus, DFS as a non-cash transaction media issued by bank is more easily disseminated throughout the population regarding the positive perception of unbanked people who have different demographic backgrounds.

4. Conclusion

The knowledge of unbanked community about DFS was still relatively low. The relevant parties such as Bank Indonesia, banks and agencies have not done much socialization about DFS to the public. After an explanation by the researchers in the field on the concept and mechanism of DFS, it seems that most people who became respondents had a positive perception on the presence of DFS. The public had high perceived usefulness, perceived ease of use on DFS and instead had a low perceived risk. Interest to adopt DFS in the category of early adapters and early majority could be determined as a signal that public would immediately adopt DFS. Other interesting study results were demographic factors such as gender, age and no connection level with the perceived benefits, ease and risk of DFS as a mean for non-cash transactions in the future use of the unbanked community.

If the result of this study can reflect the DFS perceptions of the unbanked community as a whole then there is great potential for accelerating the DFS program through socialization to the general public without considering the demographic factors in a structured and intensive manner. Moreover, the agent has a strategic role as one of the chain of DFS acceleration. The challenges faced by BI in doing socialization to the unbanked public about the importance of non-cash transactions or DFS is that educational process to the

agent takes time, and recruiting more agents is also not an easy thing. Therefore, the requirements to become an agent should be loosened.

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